

WHAT IS CLAIMED IS:

1. A method for producing a mammalian peptide which comprises:

growing plant cells containing an integrated sequence comprising,

a first expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plant cells, (2) a structural gene coding for said mammalian peptide, and (3) a termination region,

whereby said structural gene is expressed to produce said mammalian peptide; and

isolating said mammalian peptide substantially free of plant cell components.

2. A method according to Claim 1, wherein said integrated sequence ~~includes~~ ^{comprise} a second expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plants, (2) a structural gene coding for a peptide which allows for selection of plant cells expressing said peptide, and (3) a termination region.

3. A method according to Claim 2, wherein said transcriptional and translational initiation region ^{of said first expression cassette} is derived at least in part from a transcriptional and translational initiation region of a Ti- or Ri-plasmid.

4. A method according to Claim 3, wherein said transcriptional and translational initiation region ^{of said first expression cassette} regulates expression of mannopine synthase, octopine synthase or nopaline synthase.

5. A method according to Claim 1, wherein said transcriptional and translational initiation

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region of said first expression cassette regulates expression of a plant gene.

6. A method according to Claim 1, wherein
5 said integrated sequence [~~includes~~^{comprises}] a boundary region from T-DNA.

7. A method for producing an interferon
which comprises:
10 growing plant cells containing an integrated sequence comprising,
a first expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said
15 plant cells and derived from a region which regulates expression of a T-DNA-gene, (2) a structural gene coding for an interferon, and (3) a termination region functional in said plant cells,
whereby said structural gene is expressed to
20 produce said interferon, and
isolating said interferon substantially free of plant cell components.

said plant cells are dicotyledon plant cells
8. A method according to Claim 7, wherein⁸
25 said integrated sequence [~~includes~~^{comprises}] a second expression cassette having in the direction of transcription (1) a transcriptional and translational initiation region functional in said plant cells, (2) a structural gene coding for an enzyme which imparts antibiotic
30 resistance, and (3) a T-DNA boundary.

9. A method according to Claim 8, wherein
said first expression cassette transcriptional and translational initiation region regulates expression of
35 the mannopine synthase gene of T-DNA.

10. An expression cassette comprising a DNA sequence having in the direction of transcription a transcriptional and translational initiation region functional in plant cells, a structural gene coding for a mammalian peptide, and a termination region functional in plant cells.

11. An expression cassette according to Claim 10 including joined to said DNA sequence a second expression cassette comprising a second transcriptional and translational initiation region functional in plant cells, a structural gene coding for a peptide providing a phenotypic property capable of selection in plant cells, and a termination region functional in plant cells.

12. An expression cassette according to Claim 11, ~~including~~ ^{comprising} a T-DNA boundary.

13. A DNA construct comprising a first expression cassette having in the direction of transcription a ^{mannopine synthase} transcriptional and translational initiation region regulating the expression of mannopine synthase of T-DNA, a structural gene coding for γ -interferon and a termination region functional in plant cells, a second expression cassette comprising in the direction of transcription a transcriptional and translational initiation region regulatory the expression of octopine synthase of T-DNA, a structural gene coding for an enzyme imparting antibiotic resistance to plant cells, and a termination region functional in plant cells, and a T-DNA boundary.

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